

Claims

I Claim:

5 1. A joist comprised of:

- (a) at least one cold-formed elongated chord member;
- (b) a cold-formed web having a plurality of web members;
- 10 (c) means for securing said web to said chord member.

2. A joist as claimed in Claim 1 comprising a first and second spaced cold-formed chord member with said web secured to said spaced first and second
15 chord members.

3. A joist as claimed in Claim 2 wherein said securing means comprises fasteners.

4. A joist as claimed in Claim 3 wherein said web includes stiffening means.

5. A joist as claimed in Claim 4 wherein said web comprises a plurality of
20 web members fastened together.

6. A joist as claimed in Claim 5 wherein said web members are segmented.

7. A joist as claimed in Claim 6 wherein one of said web members has a different thickness than the remaining web members.

8. A joist as claimed in Claim 7 wherein each said web segments includes
25 said stiffening means and said stiffening means comprised a first stiffening means at each end of said web segments, and a second stiffening means disposed intermediate said ends of said web segments.

9. A joist as claimed in Claim 8 wherein said second stiffening means include holes adapted to receive bridging means.

10. A supporting surface comprising a plurality of joist, each said joist comprised of:

- 5 (a) spaced cold-formed upper and lower metal chord members;
- (b) a web intermediate said upper and lower chord members;
- (c) fasteners to fasten said web to said upper and lower chord members;

said upper chords disposed in a plane defining said supporting surface.

10 11. A supporting surface as claimed in Claim 10 wherein said web comprises a plurality of web segments, said segments fastened together by mechanical fastening means.

12. A supporting surface as claimed in Claim 11 wherein said web segments
15 and upper and lower chord members are coated with a coating material.

13. A supporting surface as claimed in Claim 12 wherein at least one of said web segments includes an opening there through, and a stiffening recess for stiffening said web segment.

14. A supporting surface as claimed in Claim 13 wherein said stiffening means
20 includes at least one hole adapted to receive a bridging member for bridging adjacent joist together.

15. A supporting surface as claimed in Claim 14 wherein one of said web segments has a different thickness than said other web segments.

16. A supporting surface as claimed in Claim 15 wherein said chord segments
25 extend longitudinally along a length thereof and said web segments disposed adjacent said ends of said chord members have a greater thickness than said web segments disposed intermediate said ends.

17. A supporting surface as claimed in Claim 16 where at least one of said chord members has a length presenting a first portion with a first thickness and a second portion with a second thickness.

18. A supporting surface as claimed in Claim 17 wherein said upper and lower
5 chord members each present a horizontal chord extension.

19. A supporting surface as claimed in Claim 18 wherein said horizontal chord extensions are disposed symmetrically about said web.

20. A supporting surface as claimed in Claim 19 wherein said upper chord member further includes a vertical extension.

10 21. A supporting surface as claimed in Claim 20 wherein said horizontal extensions of said upper chord are adapted to support a deck.

22. A supporting surface as claimed in Claim 21 wherein said deck includes composite concrete slab having said vertical said extensions of said upper chord disposed therein.

15 23. A supporting surface as claimed in Claim 22 wherein said vertical extension includes a spot clinch.

24. A composite floor system comprising:

(a) a plurality of metal joist, said joist comprising:

20 (i) an upper chord member formed from sheet metal to present a vertical chord extension and horizontal upper chord extensions symmetrically disposed about said vertical extension.

(ii) a lower chord member formed from sheet metal to present a horizontal lower chord extension.

25 (iii) a plurality of web segments fastened together to define a substantially vertically disposed web.

(iv) mechanical fasteners to fasten said web to said spaced upper and lower chords.

(v) a concrete slab disposed on said upper chord of said plurality of joist with said vertical extension of said upper chord embedded in said concrete slab to define said composite floor.

25. A composite floor system as claimed in Claim 24 or in said upper and lower chord members and said web segments are painted.

26. A composite floor system as claimed in Claim 25 or in said mechanical fasteners comprised rivets.

27. A composite floor system as claimed in Claim 26 wherein one of said web segments has a thickness greater than said other web segments.

28. A composite floor system as claimed in Claim 27 wherein at least one of said chord members has a first portion with a first thickness and a second portion with a second thickness.

29. A composite floor system as claimed in Claim 28 wherein one of said extensions of said upper chord member includes a spot clinch.

30. A method of producing a joist comprising the steps of:

(a) forming upper and lower chords from sheet metal;

(b) forming at least one web member from sheet metal;

(c) fastening said web between said upper and lower chords with mechanical fasteners.

31. A method is claimed in Claim 30 wherein said web, and upper and lower chords are painted prior to said fastening step.

32. A method is claimed in Claim 31 wherein said web, and upper and lower chords are painted prior to said forming steps.

33. A method is claimed in Claim 32 wherein such sheet metal forming said web and upper and lower chords is stamped to produce holes adapted to receive said fasteners.

34. A method is claimed in Claim 33 including a step of forming a plurality of
5 web members fastened together to define a web.

35. A method is claimed in Claim 34 wherein said web members are selected with different web thickness.

36. A method is claimed in Claim 35 wherein said chord members include reinforced sections to accommodate greater loads.

10 37. A joist as claimed in claim 6 wherein opposite ends of said upper chord are adapted to be load bearing.

38. A joist as claimed in claim 6 wherein opposite ends of said lower chord are adapted to be load bearing.

39. A joist comprised of:

- 15
- (a) at least one cold formed elongated chord member;
 - (b) a cold formed web having a stiffening recess
 - (c) means for securing said web to said chord member.